

Serial No.: 09/824,332 Filed: 4/2/2001
Amendment dated: September 20, 2004
Reply to Office Action of: 7/26/2004
Atty. Docket No.: MAC-0113

REMARKS

Please amend claim 26 as noted in the Listing of Claims on page 2 and enter new claim 58.

Applicants hereby acknowledge that their submission filed May 3, 2004, to wit a Request for Continued Examiner in accordance with 37 C.F.R. 1.114 and the submission on the required fee under 37 C.F.R. 1.17(e), has been entered.

Claim 26 has been amended to include the limitation that the heat exchanger means comprises a plurality of fluid passage means therein, each fluid passage means having at least one fluid entrance and exit to permit the atomization fluid and the FCC feed to flow separately into and through. Support for this amendment can be found on page 2, lines 17-21 of the instant specification. No new matter has been added.

REJECTION UNDER 35 U.S.C. 102

Claims 26, 30-37, and 54 have been rejected under 35 U.S.C. 102(b) as being anticipated by published European Patent Application Number 0 593 171, Kaufman ("Kaufman").

EXAMINER'S POSITION

The Examiner takes the position that Kaufman discloses a riser reactor comprising at least one feed nozzle wherein the feed nozzle comprises a central passageway, an outlet, at least one atomization fluid passageway having a forward acute angle greater than 60°, and a heating zone. It The Examiner contends that the design of the Kaufman apparatus inherently includes a heating zone. The Examiner continues addressing various dependent claims.

Thus, the Examiner takes the position that the present claims structurally read on the apparatus of Kaufman.

APPLICANTS' POSITION

Applicants respectfully disagree with the Examiner, as it is applicants' position that Kaufman does not anticipate the presently claimed invention. In order to anticipate, a given reference must disclose, either directly or indirectly, each and every element of the claimed invention. Thus, it has been frequently established by Federal Circuit decisions that anticipation

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is established only if all of the elements of an invention as stated in a patent claim are identically set forth in a single prior art reference, Transclean Corporation v. Bridgewood Services, Inc., 290 F.3d 1364, 62 U.S.P.Q.2d 1865 (Fed. Cir. 2002); Gechter v. Davidson, 116 F.3d 1454, 1457, 43 U.S.P.Q.2d 1030, 1032 (Fed. Cir. 1997); Mehl/Biophile International Corporation v. Milgraum, 192 F.3d 1362, 1365, 522 U.S.P.Q.2d 1303, 1306 (Fed. Cir. 1999).

As amended the present invention is a fluidized catalytic cracking unit comprising a reactor comprising at least one feed nozzle. The feed nozzle comprises a central passageway a central passageway comprising at least one FCC feed inlet; an outlet comprising an atomization zone in fluid communication with the reactor; at least one atomization fluid passageway fluidly communicating with the central passageway via an atomization fluid passageway outlet; a heating zone; and a first mixing zone comprising a second inlet for an atomization fluid positioned upstream from the atomization fluid passageway outlet wherein the second inlet comprises a sparger. The heating zone comprises a plurality of fluid passage means therein, each fluid passage means having at least one fluid entrance and exit to permit the atomization fluid and the FCC feed to flow separately into and through, wherein said heating zone is configured to promote heat exchange between the FCC feed and the atomization fluid before the FCC feed and atomization fluid mix. Figure 3 provides a schematic of one embodiment of a heating zone suitable for use in the present invention.

Applicants concede that Kaufman discloses a riser reactor comprising at least one feed nozzle wherein the feed nozzle comprises a central passageway, an outlet, at least one atomization fluid passageway having a forward acute angle greater than 60°. However, applicants respectfully disagree that Kaufman includes a heating zone according to the instant invention. Kaufman does not include a heating zone comprising a plurality of fluid passage means therein, each fluid passage means having at least one fluid entrance and exit to permit the atomization fluid and the FCC feed to flow separately into and through, wherein said heating zone is configured to promote heat exchange between the FCC feed and the atomization fluid before the FCC feed and atomization fluid mix as is presently claimed.

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The Examiner is requested to reconsider and withdraw this rejection.

REJECTION UNDER 35 U.S.C. 103

Claim 29 has been rejected under 35 U.S.C. 103(a) as being obvious in light of European Patent Application Number 0 593 171, Kaufman ("Kaufman") in view of United States Patent Number 5,306,418, Dou et al. ("Dou").

EXAMINER'S POSITION

The Examiner takes the position that Kaufman is silent as to the central passageway containing a stream splitter. Thus the Examiner has cited Dou as disclosing the use of a stream splitter in an FCC feed nozzle.

APPLICANTS' POSITION

Applicants respectfully disagree with the Examiner. Claim 29 is a dependent claim and by definition includes all of the limitations of the claim from which it depends. Therefore, claim 29 includes all of the limitations of novel, independent Claim 26.

It would not have been obvious from the teachings of Kaufman and Dou, alone or in combination, to utilize a heating zone comprising a plurality of fluid passage means therein, each fluid passage means having at least one fluid entrance and exit to permit the atomization fluid and the FCC feed to flow separately into and through, wherein said heating zone is configured to promote heat exchange between the FCC feed and the atomization fluid before the FCC feed and atomization fluid mix as is presently claimed. Therefore, it would not have been obvious to further incorporate a stream splitter into the novel fluidized catalytic cracking of Claim 26.


The Examiner is requested to reconsider and withdraw this rejection.

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Based on the preceding arguments and amendments, the Examiner is requested to reconsider and withdraw all rejections and pass this application to allowance. The Examiner is encouraged to contact applicants' attorney should the Examiner wish to discuss this application further.

Respectfully submitted:

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